CLAIMS

1. Materials comprising organic groups containing sulphur and phosphorous bonded together by a hydrocarbon chain and bonded via phosphorous and oxygen atoms to a mineral oxide of one or more elements M, said materials being characterized in that they comprise M-O-M' bonds, M' representing an element of a mineral oxide identical to or different from M, in that the ratio of said element M to the phosphorous is about 0.5:1 to about 500:1, and in that each phosphorous atom of the phosphorous-containing groups forms at least one P-O-M bond and/or P-O-M' bond.

2. Materials according to claim 1, in which M and M' represent the same element.

3. Materials according to claim 1 or claim 2, in which M and M' represent an element from groups IB, IIB, IIIB, IVB, VB, VIB, VIIB, VIII, IIIA, IVA, the lanthanides or the actinides of the periodic table.

4. Materials according to any one of claims 1 to 3, in which M and M' are selected from elements from the group formed by titanium, zirconium, iron, aluminium, silicon and tin, and preferably selected from elements from the group formed by titanium, zirconium and aluminium.

5. Materials according to any one of claims 1 to 4, in which the organic sulphur-containing group is preferably selected from thiol groups and their derivatives or from acid sulphonic groups and their derivatives.

6. A process for preparing a material according to any one of claims 1 to 4, in which at least one halogenated derivative with formula $M(Hal)_z$ or at least one alkoxylated derivative with formula $M(OR')_z$, where z is equal to the valency of the element M, Hal is a halogen atom, R' is a hydrocarbon group, or at least one compound of element M selected from the group formed by carboxylates, sulphates, nitrates, hydroxides and oxychlorides is brought into contact with at least one solution in a solvent of at least one phosphorous-containing compound with formula I where the sum m+n+p+q is equal to 3, m=0, 1 or 2, q=0, 1 or 2, x=0 or 1, p=0, 1 or 2, R is a hydrocarbon group, X is a hydrocarbon group or a group with formula $SiR"_3$ where R" is a hydrocarbon group, Z is a hydrocarbon group optionally comprising heteroatoms, Cat^+ is a monovalent cation and A is a sulphur-

containing group or a reactive group that can be transformed into a sulphur-containing group.

7. A process according to claim 6, in which an alkoxylated derivative with formula $M(OR')_z$ where R' is an alkyl group containing 1 to 12 carbon atoms, preferably 1 to 6 carbon atoms, is brought into contact with a solution in a solvent of a phosphorous-containing compound with formula I where Cat^+ is a proton H^+, R is an alkyl group containing 1 to 18 carbon atoms or an aryl group containing 6 to 18 carbon atoms or an alkyl-aryl group containing 7 to 24 carbon atoms, X is a group with formula SiR''_3, where R" is a hydrocarbon group, Z is a saturated or unsaturated bivalent alkyl group containing 1 to 18 carbon atoms or a bivalent aryl group containing 6 to 18 carbon atoms or a bivalent alkyl-aryl or aryl-alkyl group containing 7 to 24 carbon atoms and A is a sulphur-containing group selected from thiol groups and their derivatives and sulphonic acid groups and their derivatives.

8. A process according to claim 6 or claim 7, in which the phosphorous-containing compound with formula I is a compound in which m=2, q=1 and n=p=zero.

9. A process according to claim 6 or claim 7, in which the phosphorous-containing compound with formula I is a compound in which n=2, q=1 and m=p=zero.

10. A process according to any one of claims 6 to 9, in which the phosphorous-containing compound with formula I is a compound in which Z is a saturated bivalent alkyl compound containing 1 to 6 carbon atoms, preferably a polymethylene group.

11. A process according to any one of claims 6 to 10, in which the solvent for the phosphorous-containing compound is tetrahydrofuran, dimethylsulphoxide, dichloromethane or water.

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